

Needle Valve

NV3 Series



- ❖ Maximum working pressure up to 6000 psig (413 bar)
- ❖ Working temperature from -65°F to 1200°F (-53°C to 648°C)
- ❖ Union-bonnet construction for safety
- ❖ Straight and angle patterns
- ❖ Upper stem and lower stem design

Features

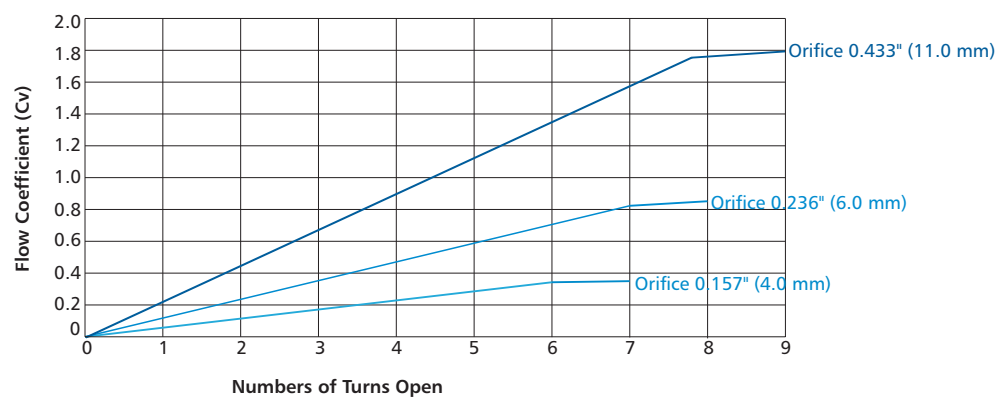
- ❖ Maximum working pressure up to 6000 psig (413 bar)
- ❖ Working temperature from -65°F to 1200°F (-53°C to 648°C)
- ❖ Union-bonnet construction for safety
- ❖ Straight and angle patterns
- ❖ Upper stem and lower stem design, Stem threads above packing protected from system media
- ❖ Panel mounting available
- ❖ optional handle colors available

Pressure vs. Temperature

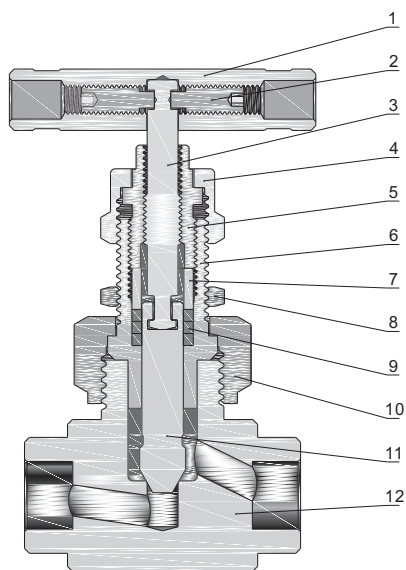
ASME Class	2500						N/A
Material Group	2. 2	2. 2	2. 8	3. 4	3. 1	3. 5	N/A
Material Name	316 S.S.	316H S.S.	F53 S.S.	Alloy 400	Alloy 20	Alloy 600	Alloy C-276
Temperature, °F (°C)	Working Pressure,psig (bar)						
-65 (-53) to 100 (37)	6000 (413)	6000 (413)	6000 (413)	5000 (344)	5000 (344)	6000 (413)	6000 (413)
200 (93)	5160 (355)	5160 (355)	5160 (355)	4400 (303)	4640 (319)	5600 (385)	6000 (413)
250 (121)	4910 (338)	4910 (338)	5350 (368)	4260 (293)	4500 (310)	5460 (376)	6000 (413)
300 (148)	4660 (321)	4660 (321)	5540 (382)	4120 (283)	4360 (300)	5320 (366)	6000 (413)
350 (176)	4470 (307)	4470 (307)	5330 (367)	4050 (279)	4185 (288)	5220 (359)	5975 (411)
400 (204)	4280 (294)	4280 (294)	5120 (353)	3980 (274)	4010 (276)	5120 (352)	5880 (405)
450 (232)	4130 (284)	4130 (284)	4960 (342)	3970 (273)	3955 (272)	5030 (346)	5710 (393)
500 (260)	3980 (274)	3980 (274)	4800 (331)	3960 (272)	3900 (268)	4940 (340)	5540 (381)
600 (315)	3760 (259)	3760 (259)	4640 (320)	—	3790 (261)	4780 (329)	5040 (347)
650 (343)	3700 (254)	3700 (254)	4580 (315)	—	3750 (258)	4700 (323)	4905 (337)
700 (371)	3600 (248)	3600 (248)	4520 (311)	—	3710 (255)	4640 (319)	4730 (325)
750 (398)	3520 (242)	3520 (242)	4430 (305)	—	3665 (252)	4430 (305)	4430 (305)
800 (426)	3460 (238)	3460 (238)	—	—	3600 (248)	4230 (291)	4230 (291)
850 (454)	3380 (232)	3380 (232)	—	—	—	4060 (279)	4060 (279)
900 (482)	3280 (225)	3280 (225)	—	—	—	3745 (258)	3745 (258)
950 (510)	3220 (221)	3220 (221)	—	—	—	2725 (187)	3220 (221)
1000 (537)	3030 (208)	3030 (208)	—	—	—	1800 (124)	3030 (208)
1050 (565)	3000 (206)	3000 (206)	—	—	—	1155 (79.5)	3000 (206)
1100 (593)	2685 (184)	2685 (184)	—	—	—	770 (53.0)	2685 (184)
1150 (621)	2285 (157)	2285 (157)	—	—	—	565 (38.9)	2285 (157)
1200 (648)	1715 (118)	1715 (118)	—	—	—	515 (35.4)	1545 (106)

Flow Data at 100°F (37°C)

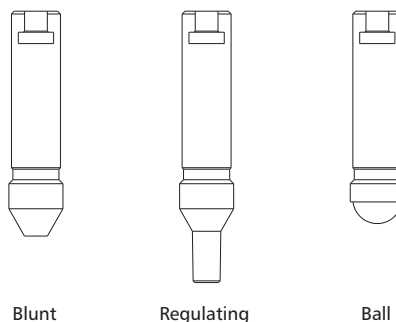
Regulating Stem



Standard Materials of Construction



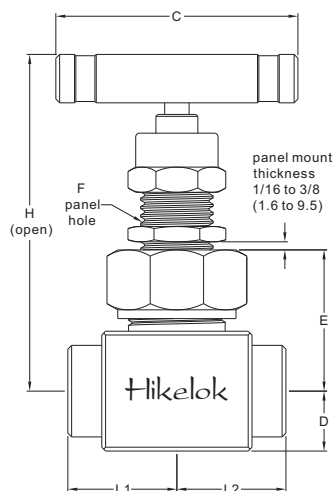
Stem Type



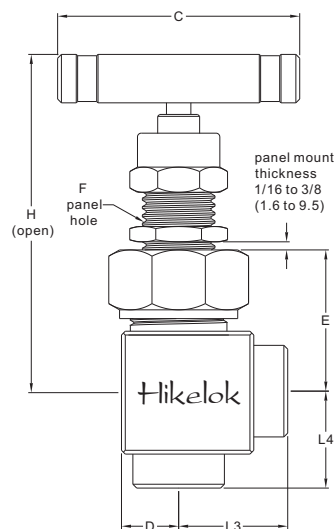
Component		Material Grade/ASTM Specification			
		316 S.S.	Alloy 400	Titanium	Alloy C-276
1	Handle	Anodized aluminum or stainless steel			
2	Set Screw	Nickel cadmium-plated steel			
3	Upper Stem	316 S.S./A276			
4	Nut	316 S.S./A276			
5	Packing Bolt	316 S.S./A276			
6	Bonnet	316 S.S./A479	Alloy R-405/B164	Titanium Gr 4/B348	Alloy C-276/B574
7	Gland	316 S.S./A276	Alloy R-405/B164	Titanium Gr 4/B348	Alloy C-276/B574
8	Nut	316 S.S./B783			
9	Packing	PTFE or graphite			
10	Nut	316 S.S./A276			
11	Lower Stem	Chrome-plated 316 S.S./A276	Alloy R-405/B164	Titanium Gr 4/B348	Alloy C-276/B574
12	Body	316 S.S./A182	Alloy 400/B164, B127, B564	Titanium Gr 4/B348 or titanium Gr 4/B381	Alloy C-276/B564

Dimensions

Straight Pattern



Angle Pattern



Basic Ordering Number	Connection Type and Size	Orifice in. (mm)	Cv	Dimension, in. (mm)													
				L1	L2	L3	L4	C	D	E	F	H					
NV3-FNPT2-04-	1/8 Female NPT	0.157 (4.0)	0.35	1.00 (25.4)	1.00 (25.4)	0.89 (22.6)	1.00 (25.4)	1.75 (44.5)	0.39 (9.9)	1.09 (27.7)	19/32 (15.1)	3.04 (77.2)					
NV3-FNPT4-04-	1/4 Female NPT			1.03 (26.2)	1.03 (26.2)												
NV3-NPT4-FNPT4-04-	1/4 Male NPT			1.00 (25.4)	1.03 (26.2)												
NV3-NPT4-04-	1/4 Male NPT			1.00 (25.4)	1.00 (25.4)	1.00 (25.4)											
NV3-NPT6-04-	3/8 Male NPT			1.03 (26.2)	1.03 (26.2)	0.89 (22.6)											
NV3-FBP4-04-	1/4 Female BSPP			1.00 (25.4)	1.22 (30.9)	1.16 (29.5)	1.48 (37.6)										
NV3-NPT4-F4-04-	1/4 Male NPT			1.03 (26.2)	1.22 (30.9)												
NV3-FNPT4-F4-04-	1/4 Female NPT			1.03 (26.2)	1.22 (30.9)												
NV3-F4-04-	1/4" Hikelok			1.22 (30.9)	1.22 (30.9)	0.88 (22.4)	1.19 (30.2)										
NV3-M6-04-	6 mm Hikelok			0.91 (23.1)	0.91 (23.1)												
NV3-M8-04-	8 mm Hikelok																
NV3-FSW4-04-	1/4" FSW																
NV3-FNPT4-06-	1/4 Female NPT	0.236 (6.0)	0.8					2.50 (63.5)	0.50 (12.7)	1.34 (34.0)	25/32 (19.8)	3.70 (94)					
NV3-FNPT6-06-	3/8 Female NPT			1.13 (28.6)	1.13 (28.6)	1.0 (25.4)	1.13 (28.6)										
NV3-NPT6-06-	3/8 Male NPT					1.06 (26.9)											
NV3-NPT8-06-	1/2 Male NPT			1.50 (38.1)	1.50 (38.1)	1.25 (31.8)	1.50 (38.1)										
NV3-F6-06-	3/8" Hikelok			1.41 (35.9)	1.41 (35.9)	1.29 (32.8)	1.66 (42.2)										
NV3-F8-06-	1/2" Hikelok			1.52 (38.6)	1.52 (38.6)	1.40 (35.6)	1.65 (41.9)										
NV3-M10-06-	10 mm Hikelok			1.42 (36.1)	1.42 (36.1)	1.30 (33.0)	1.55 (39.4)										

Basic Ordering Number	Connection Type and Size	Orifice in. (mm)	Cv	Dimension, in. (mm)								
				L1	L2	L3	L4	C	D	E	F	H
NV3-M12-06-	12 mm Hikelok	0.236 (6.0)	0.8	1.52 (38.6)	1.52 (38.6)	1.40 (35.6)	1.65 (41.9)	2.50 (63.5)	0.50 (12.7)	1.34 (34.0)	25/32 (19.8)	3.70 (94)
NV3-M14-06-	14 mm Hikelok											
NV3-M16-06-	16 mm Hikelok											
NV3-FSW6-06-	3/8" FSW											
NV3-FSW8-06-	1/2" FSW			1.13 (28.6)	1.13 (28.6)	1.00 (25.4)	1.13 (28.6)					
NV3-MSW12-06-	12 mm MSW											
NV3-MSW14-06-	14 mm MSW											
NV3-MSW16-06-	16 mm MSW											
NV3-MBW14-06-	14 mm MBW			1.50 (38.1)	1.50 (38.1)	1.25 (31.8)	1.50 (38.1)					
NV3-MBW16-06-	16 mm MBW											
NV3-UGM14-06-	14 mm UGM			2.92 (74.1)	2.92 (74.1)	2.55 (64.7)	2.92 (74.1)					
NV3-MS20-06-	M20 x 1.5 Male ISO			1.50 (38.1)	1.50 (38.1)	1.13 (28.6)	1.50 (38.1)					
NV3-MS22-06-	M22 x 1.5 Male ISO											
NV3-FNPT8-11-	1/2 Female NPT	0.433 (11.0)	1.8	1.56 (39.6)	1.56 (39.6)	1.31 (33.3)	1.56 (39.6)	3.50 (88.9)	0.78 (19.8)	1.91 (48.5)	11/32 (26.2)	4.85 (123)
NV3-FNPT12-11-	3/4 Female NPT			1.63 (41.3)	1.63 (41.3)							
NV3-FNPT16-11-	1 Female NPT			1.81 (46.0)	1.81 (46.0)							
NV3-NPT12-11-	3/4 Male NPT			1.63 (41.3)	1.63 (41.3)							
NV3-F8-11-	1/2" Hikelok											
NV3-F12-11-	3/4" Hikelok											
NV3-M14-11-	14 mm Hikelok			1.97 (50.0)	1.97 (50.0)	1.68 (42.7)	2.08 (52.8)					
NV3-M16-11-	16 mm Hikelok											
NV3-M18-11-	18 mm Hikelok											
NV3-M20-11-	20 mm Hikelok											
NV3-MSW14-11-	14 mm MSW											
NV3-MSW16-11-	16 mm MSW											
NV3-FSW8-11-	1/2" FSW			1.56 (39.7)	1.56 (39.7)	1.31 (33.3)	1.69 (42.9)					
NV3-FSW12-11-	3/4" FSW											
NV3-MBW14-11-	14 mm MBW											
NV3-MBW16-11-	16 mm MBW											
NV3-UGM14-11-	14 mm UGM			2.98 (75.7)	2.98 (75.7)							
NV3-MS27-11-	M27 x 2 Male ISO			1.56 (39.7)	1.56 (39.7)							

❖ If working pressure up to 10,000 psi, please refer to NV31 series.

How to Order

NV3— FNPT8 — F8 — S06S — GY — LA — 316

Series	Inlet Type	Inlet Size	Outlet Type	Outlet Size	Seat Material	Orifice Size	Tip Material	Tip Type	Packing Material	Panel Mounting	Handle	Flow Pattern	Body Material
NV3	FNPT Female NPT	2 1/8 in.	Same as inlet type and inlet size	If outlet and inlet are the same, eliminate the outlet designator	Same as Body S Stellite	04 0.157 in. (4.0 mm) 06 0.236 in. (6.0 mm)	Same as Body S Stellite	R Blunt A Regulating Ball	PTFE G Graphite	No Y Yes	Black Aluminum Bar R Red Aluminum Bar G Green Aluminum Bar L Blue Aluminum Bar S 304 Stainless Steel Bar	Straight A Angle	316 316 S.S. 316L 316L S.S. 304 304 S.S. 304L 304L S.S. 321 321 S.S. F91 F91 F91 F92 A400 Alloy 400 A20 Alloy 20 A600 Alloy 600 A825 Alloy 825 A276 Alloy C276 DU7 Duplex 2507 BR Brass
	NPT Male NPT	4 1/4 in.											
	FBT Female BSPT	6 3/8 in. or 6 mm											
	MBT Male BSPT	8 1/2 in. or 8 mm											
	FMS Female ISO	10 10 mm											
	MS Male ISO	12 3/4 in. or 12 mm											
	FBP Female BSPP	14 14 mm or M14 x 1.5											
	MBP Male BSPP	16 1 in. or 16 mm											
	F Fractional Tube Fitting	18 18 mm											
	M Metric Tube Fitting	20 1 1/4 in. or 20 mm or M20 x 1.5											
	UGF Nut + Gasket + Fractional Bulge Nipple	22 22 mm or M22 x 1.5											
	UGM Nut + Gasket + Metric Bulge Nipple	24 M24 x 1.5											
	FSW Fractional Socket Weld	25 25mm											
	MSW Metric Tube Socket Weld	27 M27 x 2											
	FBW Fractional Tube Butt Weld	28 28mm											
	MBW Metric Tube Butt Weld												
	PSW Pipe Socket Weld												
	PBW Pipe Butt Weld												